

CLAIMS

1. A dispersant which comprises a polyamine or polyimine backbone chain containing side chains of two or more different types of polyester chain wherein at least one type of polyester chain is derivable from one or more hydroxy carboxylic acids all of which contain a C<sub>1-6</sub>-alkylene group or lactone thereof and at least one other type of polyester chain derivable from one or more hydroxy carboxylic acids wherein at least one of the hydroxy carboxylic acids contains a C<sub>8-30</sub>-alkylene or C<sub>8-30</sub>-alkenylene chain or lactone thereof, including salts of such dispersants.

2. A dispersant as claimed in claim 1 which contains side chains from two different types of polyester chain.

3. A dispersant as claimed in either claim 1 or claim 2 wherein the polyester chain containing C<sub>1-6</sub>-alkylene groups is derivable from optionally alkyl substituted,  $\epsilon$ -caprolactone and  $\delta$ -valerolactone.

4. A dispersant as claimed in any one of claims 1 to 3 wherein the C<sub>8-30</sub>-alkenylene chain is derivable from ricinoleic acid.

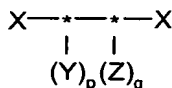
5. A dispersant as claimed in any one of claims 1 to 4 wherein the polyester chains are attached to the polyamine or polyimine backbone via amide and/or salt linkages.

6. A dispersant as claimed in any one of claims 1 to 5 wherein the polyimine is poly(C<sub>2-6</sub>-alkyleneimine).

7. A dispersant as claimed in claim 6 wherein the polyimine is polyethyleneimine.

8. A dispersant as claimed in any one of claims 1 to 7 wherein the number average molecular weight of the polyamine or polyimine is from 500 to 600,000.

9. A dispersant as claimed in any one of claims 2 to 8 which is represented by formula 1



1

wherein

X---X represents the polyamine or polyimine backbone polymer;

5 *Cont*  
*del*  
*A3*  
Y is the residue of a polyester chain which is derivable from one or more hydroxy carboxylic acids all of which contain a C<sub>1-6</sub>-alkylene group or lactones thereof;

Z is the residue of a polyester chain which is derivable from one or more hydroxy carboxylic acids at least one of which contains a C<sub>8-30</sub>-alkylene or C<sub>8-30</sub>-alkenylene group or actones thereof;

p and q are integers; and

(p + q) is from 2 to 2000.

10 10. A dispersant as claimed in claim 9 wherein the molar ratio of p to q is from 1:10 to 10:1.

15 *del*  
*del*  
11. A dispersant as claimed in either claim 9 or claim 10 wherein the molar ratio of p to q is from 1:1 to 5:1.

12. A dispersant as claimed in any one of claims 9 to 11 wherein Y is the residue of a polyester chain derivable from lauric acid,  $\epsilon$ -caprolactone and  $\delta$ -valerolactone.

13. A dispersant as claimed in claim 12 wherein the molar ratio of  $\epsilon$ -caprolactone to  $\delta$ -valerolactone is from 2:1 to 6:1.

20 *del*  
*del*  
14. A dispersant as claimed in any one of claims 9 to 13 wherein Z is the residue of poly(ricinoleic acid).

25 15. A composition comprising a particulate solid and a dispersant as claimed in any one of claims 1 to 14.

16. A composition comprising an organic medium and a dispersant as claimed in any one of claims 1 to 14.

30 17. A dispersion comprising a particulate solid, an organic medium and a dispersant as claimed in any one of claims 1 to 14.

18. A millbase comprising a particulate solid, a film-forming resin, an organic medium and a dispersant as claimed in any one of claims 1 to 14.

35 19. A paint or printing ink comprising a particulate solid, a film-forming resin, an organic medium and a dispersant as claimed in any one of claims 1 to 14.